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December 1999

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Leonie Thomas

*University of Tasmania, Australia*

Tim Freeman

*University of Tasmania, Australia*

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### Recommended Citation

Thomas, Leonie and Freeman, Tim, "A comparative study of GSS and a manual alternative" (1999). *AMCIS 1999 Proceedings*. 120.  
<http://aisel.aisnet.org/amcis1999/120>

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# A comparative study of GSS and a manual alternative

Leonie Thomas, University of Tasmania, Australia, [Leonie.Thomas@utas.edu.au](mailto:Leonie.Thomas@utas.edu.au)

Tim Freeman, University of Tasmania, Australia, [Tim.Freeman@utas.edu.au](mailto:Tim.Freeman@utas.edu.au)

## Abstract

Providing a level playing field has been discussed as a benefit of GSS. The concept of equal participation can be an influencing factor when deciding to use a GSS as a process to support group problem solving or gathering information. This paper will explore the issue of equal participation and verbal communication by comparing the GSS environment to an equivalent manual system.

The case study considered in this paper involved a project review of a Call Center implemented within the Tasmania Police. The review of the project has been conducted using both the GSS and a manual system. This provided an opportunity for comparison.

It was found that the GSS systems provided a level playing field, allowing each participant to contribute prior to any dialogue with other participants and all meaningful dialogue was captured during the automated session. The manual session was unable to capture the dialogue within and between the sub-groups resulting in a loss of richness and quality of information.

## Introduction

Group support systems (GSS) are a combination of information technology, problem solving methods, and facilitation designed to improve the productivity of group discussion, dialog and decision making. A number of researchers have considered the advantages and disadvantages of GSS tools (Dennis, 1991; Nunamaker et al., 1993).

It is clear from the literature that GSS tools have a significant impact on group participation and dialog (Zigurs, Poole and DeSanctis, 1988; Pervan, 1994). There are differing opinions as to how verbal and electronic dialog interact. Early research suggested that GSS replaced verbal dialog with electronic dialog. However DeSanctis and Gallupe (1987) describe GSS as adding a communication channel rather than replacing one. Further to this Atkinson (1997) suggests that verbal and electronic dialog are distinct and separate and raises concerns that the richness and content of verbal dialog is not captured within the electronic channel.

Atkinson (1997) makes a number of interesting observations, which this paper aims to explore. Atkinson notes that despite the use of GSS systems, meetings tend to consist of up to 80% verbal dialog and 20% electronic

or keyboard dialog. Consequently, Atkinson noted that the verbal dialog tended to dominate meeting process and the meetings tended to be less than democratic. As a result Atkinson raises serious concerns as to how well GSS systems captured the dialog within a GSS meeting. This paper aims to explore these issues and reflect on Atkinson's findings.

This paper provides a comparison between manual and automated systems and presents a number of observations concerning the interaction of verbal and electronic dialog.

The Tasmania Police have completed a project that involved the implementation of a Call Center. The project team is preparing to hand the project over to the appropriate department. Prior to the hand over a review of the project has been conducted using both the GSS and manual system. This case study provided an opportunity for comparison.

## Tasmania Police

Tasmania is the island state of Australia and has a Police force of approximately 1100 sworn officers. The Police have just implemented a call center to collect information in relation to Offence Reports. An officer will ring details to the call center from either the complainant's home or by using the radio. The project is being finalized with the view of the project team handing it over to the appropriate department. Prior to this a review of the project has been conducted using both the GSS and the manual system to gather feedback.

## The manual feedback procedure

To gather feedback on either a project or to ascertain the current school of thought in the organisation at a given time, the Tasmania Police have adopted a system that was introduced to them by KPMG. This system runs in a normal brainstorming environment with a facilitator but utilizes cards to gather information from the participants.

The session has three distinct phases: expectations, issues and benefits. Each phase has a different colored card and participants are invited to write related comments on to the cards. The cards are handed to the facilitator who places them on a board. As this collection process proceeds, the cards are initially themed by the facilitator. To examine the process further an in-depth description of the issue phase is called for.

Twenty-eight of the expected fifty participants from around the state with varying positions within the

organisation attended the session at the Police Academy. The session was held in the lecture theatre, as this was the only room large enough to accommodate everyone. Sub-groups quickly emerged as the participants sat with people from their station or work area. The verbal interaction among the groups quickly followed. Cards were handed out for participants to enter their issues onto; response was slow with continuous dialogue within and between sub-groups. During this phase the interaction within groups was at times disruptive. The facilitator worked at keeping groups focused and ensuring discussions happened at a total group level rather than the sub group level. The layout of the venue and the size of the group made this objective hard to achieve. The facilitator and two helpers collected and grouped the cards into columns on a board using emerging themes as a guide for the columns. The 28 participants generated 73 issues, 2.6 per participant. The project team expected a much higher response prior to conducting this session. There are a number of unresolved issues and users expectations have been higher than the deliverables of the project.

The facilitator commences reading out the cards one at a time asking if anyone wishes to speak to the card to clarify the exact meaning. At times the lecture theatre was silent with participants not willing to take ownership of a particular card. The facilitator would have to re-read the card three and four times in some cases waiting for clarification. The majority of the time the dialogue continued within the sub-groups and was rarely shared with the rest of the participants. After reviewing the column the group is asked to give a heading to the column to reflect the content. This process is continued for all columns. As this process is time consuming resulting in participant being focused on their sub-groups rather than the session. Towards the end of this phase only a few participants were continually involved in clarifying the cards the rest of the participants were deeply entrenched in their sub-groups. The theme headings were listed and participants individually rated them from 1 to N in order of importance. Twenty-five out of the twenty-eight forms were handed in.

The manual environment does little to provide for equal participation. There is no guarantee that every person participated in the session; in fact there was strong evidence to suggest that not every one did participate. Facilitation of the session was hard if not impossible at times with the sub-groups becoming more comfortable to operate on their own and at times ignoring the rest of the participants. When the cards are collected focus is placed on the biggest column as being the most important. Duplicate issues are not removed and there is no ranking of issues in relation to their perceived level of importance only the ranking of the emerging themes.

## **The automated feedback procedure**

Three GSS feedback sessions were conducted with different groups involved in the call centre project; the project team, call centre operators, and allocation officers. Each session was three hours in length with five to ten participants in each session.

The GSS meeting room consisted of a U-shaped table equipped with 12 networked laptops and a projection screen located at the front of the room. The GSS software package MeetingWorks was used to conduct the meetings. Facilitation of the meetings was split between a process facilitator and a technical facilitator. The process facilitator assumed the traditional facilitation role, whilst the technical facilitator managed the GSS system.

As with the manual feedback sessions, the automated sessions focused on collating expectations, issues and benefits and were covered in three distinct phases. Each phase involved three steps. Participants were firstly given the opportunity to electronically submit a number of ideas anonymously. Participants were encouraged to focus on their own entries and asked not to enter into discussions with other participants. The layout of the room made it easy for the facilitator to monitor any discussion and encourage participant to focus on entering their issues. Discussion commenced as participants completed entering their ideas. These discussions however were not restricted to the task at hand.

Once all participants had entered their ideas phase two of the process commenced. This phase involves clarifying the entries and removing duplications. The facilitator read out each entry and the participants were asked to take ownership and clarify the meaning of the entry. Participants were encouraged to note any new ideas that evolved during the discussion and have these included before proceeding to the next phase. The discussion of issues happened at the group level. Rarely did participants break away and conduct private conversations. While some participants were more vocal than others the discussion always revolved around the issue under consideration, consequently equal time was given to the discussion of each issue.

Phase three allowed the participants to rank the ideas in order of importance using a scale of 1-5 with 5 being the most important issue. On completing the ranking results were reviewed and participants were asked to re-rank the top bracket of issues from 1-N. This phase was quick to conduct and provided rapid feedback to participants. Discussion was focused around group outcome with little discussion of personal preference. There was virtually no discussion prior to the results being presented.

The volume of ideas generated in the automated sessions was greater than in the manual session. The session conducted with the allocation officers provided

7.2 issues compared with 2.6 in the manual session, suggesting that the electronic dialog improved volume and quality of input by participants.

## Findings

On reflection there are a number of observations that can be made about the dialog during the automated sessions. Firstly, the GSS systems did provide a level playing field, allowing each participant to contribute prior to any dialogue with other participants. This observation challenges the previous finding of Atkinson (1997). The Tasmania Police have provided the ideal opportunity to observe the aspect of democracy and domination within an automated session. In a normal environment the rank of an officer will impact on the contribution of other officers to any discussion. The automated sessions removed the issue of rank allowing participants the opportunity to express their views anonymously in the first instance. The manual session provided the opportunity for both dominant sub-groups and ranking officer to influence the participation of other members.

Secondly, all meaningful dialogue was captured during the automated session. The manual session was unable to capture the dialogue within and between the sub-groups resulting in a loss of richness of information. The anticipated issues from the manual session were far higher than from the automated session. The participants of the manual session had through various mechanisms identified a number of issues in relation to the call centre project. The session failed to produce and therefore document some of these issues. The automated session encouraged dialogue between participants while focusing on the issue under discussion. Any new idea that was generated during this discussion was captured and added to the session. All participants contributed to the discussion with some taking ownership of some issues they had not themselves raised.

Discussion is an inevitable component of both the automated and manual sessions. The manual environment demonstrated it was difficult to capture discussions thereby losing valuable contributions. On the other hand, the automated session provided the perfect environment for focussing dialogue and capturing meaningful discussions. This paper has demonstrated that automated sessions are better equipped to capture the verbal dialogue that otherwise would be lost.

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